

इंटरनेट

मानक

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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11107 (1984): Dimensions for modular units for machine tool construction - columns [PGD 3: Machine Tools]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

(Reaffirmed 2005)

DIMENSIONS FOR MODULAR UNITS FOR MACHINE TOOL CONSTRUCTION — COLUMNS

1. Scope — Specifies certain dimensions relating to the interchangeability of columns used in special purpose machines constructed from modular units.

2. Nominal Size

2.1 The nominal size of a column shall be given by the nominal width of the saddle on the related slide units (see IS : 9722-1981 Dimensions for modular units for machine tool construction — slide units), which is to be accommodated on the column.

3. Types — The columns shall be of the following four types:

Type A — Plain type having provision for mounting slide units of sizes 250, 320, 400, 500 and 630 mm.

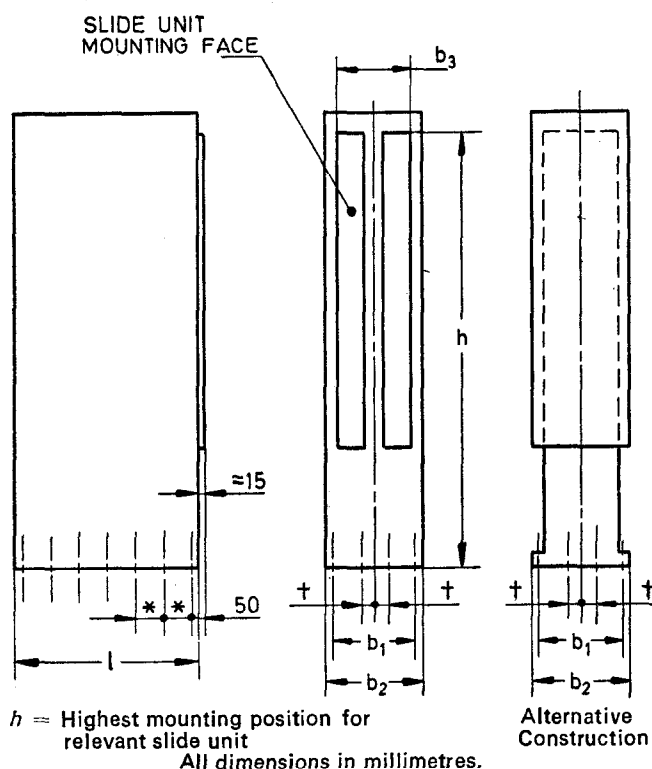
Type B — Plain floor mounted type having provision for mounting slide units of sizes 400, 500, 630 and 800 mm.

Type C — Integral way type for sizes 400, 500 and 630 mm.

Type D — Integral way floor mounted type for sizes 400, 500, 630 and 800 mm.

4. Dimensions

4.1 Type A — Plain type having provision for mounting slide units:



Nominal Size	$b_1 \pm 0.2$	b_2	b_3 Min	l	Fixing Bolt Size
250	280	320	270	630	M16
320	355	400	340	710	
400	450	500	420	800	
500	580	630	520	900	M20
630	740	800	650	1 000	

*Lateral fixing bolt holes shall be spaced in multiples of 25 mm (manufacturer's discretion).

Tolerance between any two holes ± 0.2 mm.

†Front fixing bolt holes shall be spaced from the centre line in multiples of 25 mm (manufacturer's discretion).

Tolerance between any two holes ± 0.2 mm.

Adopted 19 December 1984

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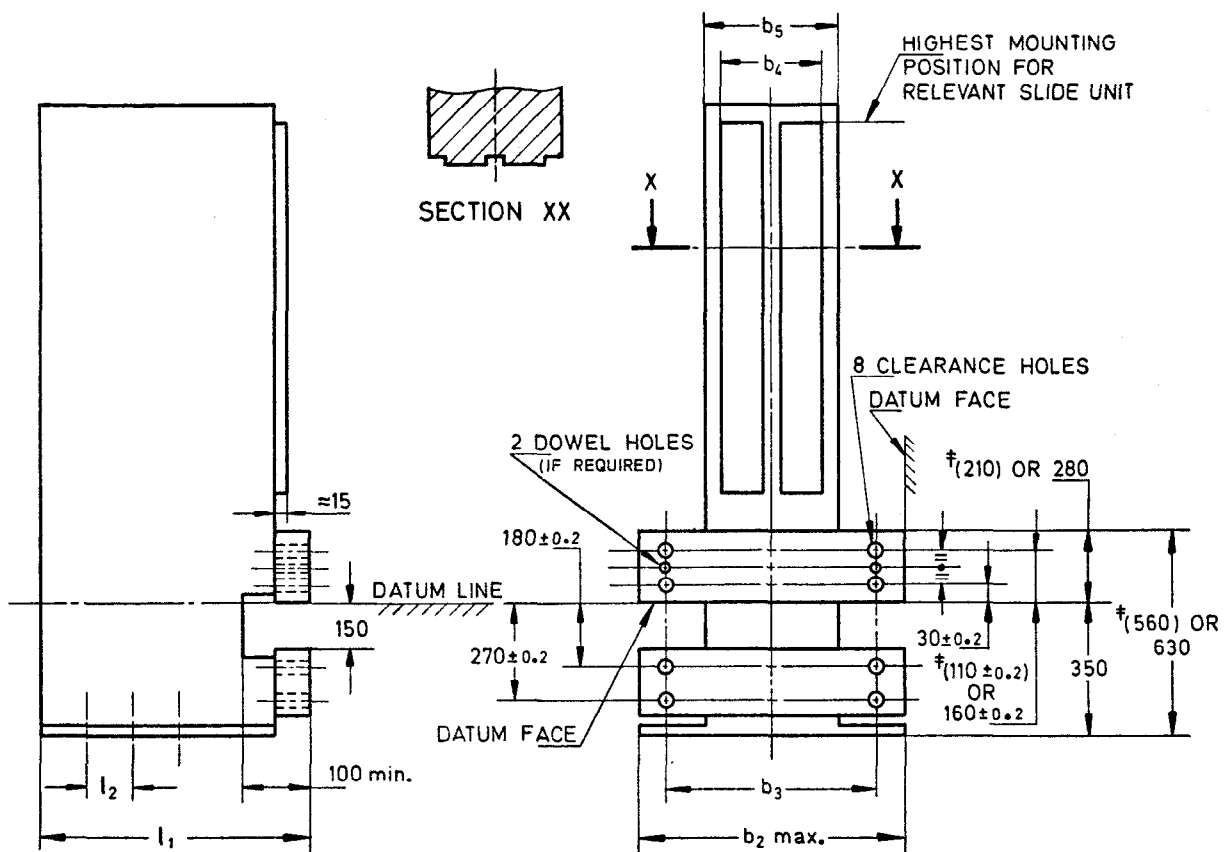
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IS : 11107 - 1984

4.1.1 Location of column — As an alternative to the location by means of tenon and slot, location by dowels may be used.

4.2 Type B — Plain floor mounted type having provision for mounting slide unit.



†Dimensions (210 mm) and (110 ± 0.2 mm) are non-preferred dimensions and correspond to dimension (560 mm).

All dimensions in millimetres.

Nominal Size	b_1 Max	$b_3 \pm 0.2$	b_4	b_5	l_1	Fixing Bolt Size
400	600	545	420	500	1 000	M20
500	700	645	520	630	1 120	M20 or M24
630	830	775	650	800	1 250	
800	1 000	945	820	1 000	1 400	

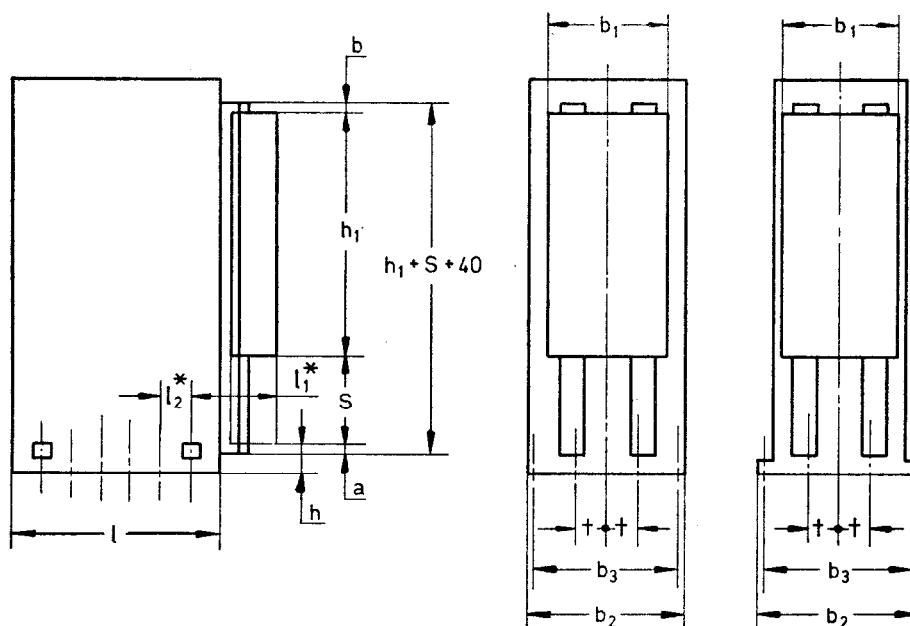
l_1 Lateral fixing bolt holes shall be spaced in multiples of 25 mm (manufacturer's discretion).

Tolerance between any two holes ± 0.2 mm.

Note — The nominal size corresponds to the nominal width to the saddle that may be mounted on the column.

4.2.1 Location — Column to be located to centre base by means of dowels and tenons or tenons. If dowels are used, the dowel holes shall be midway between upper pair of fixing bolts irrespective of which bolt pattern is employed and dowels shall be perpendicular to joint face.

4.3 Type C — Integral way type.



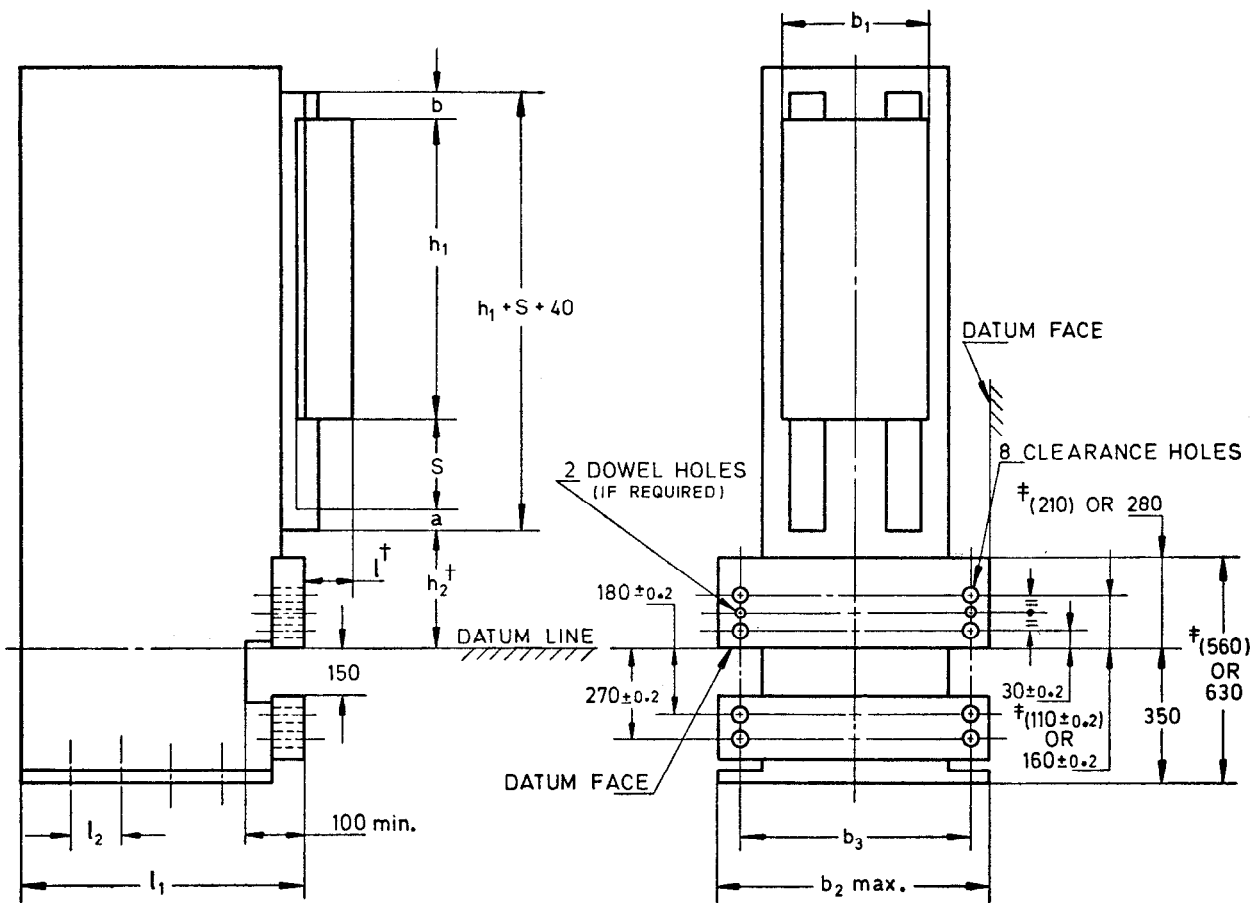
All dimensions in millimetres.

Nominal Size	b_1	$h_1 \ddagger$	$S \S$	b_2	$b_2 \pm 0.2$	l	Fixing Bolt Size
400	400	800	400	500	450	800	M20
500	500	1 000		630	580	900	
630	630	1 250		800	740	1 000	

$a + b = 40$
 $h = 200$ mm or multiples of 200 mm (manufacturer's discretion).
 $\ast l_1$ Front fixing bolt holes shall be spaced from the centre line in multiples of 25 mm (manufacturer's discretion).
 $\ast l_2$ Lateral fixing bolt holes shall be spaced in multiples of 25 mm (manufacturer's discretion).
 $\ddagger$ Fixing bolts holes shall be spaced from the centre line in multiples of 25 mm (manufacturer's discretion).
 $\S$ The dimensions given for length of saddle h_1 may be increased using value chosen from R10 series of preferred numbers.
 $\S$ The dimensions given for the stroke S may be increased using values chosen from R5 series of preferred numbers. If required, other values may be chosen from the R10 series of preferred numbers.

4.3.1 Location of column — As an alternative to the location by means of tenon and slot, location by dowels may be used.

4.4 Type D — Integral way floor mounted type.



All dimensions in millimetres.

Nominal Size	b_1	h_1^*	$S^\S$	$b_2 \text{ Max}$	$b_3 \pm 0.2$	$l_1 \text{ Min}$	Fixing Bolt Size
400	400	800	400	600	545	1 000	M20
500	500	1 000		700	645	1 120	M20 or M24
630	630	1 250		830	775	1 250	
800	800	1 600		1 000	945	1 400	

$$a + b = 40$$

l_2 Lateral fixing bolt holes shall be spaced in multiples of 25 mm (manufacturer's discretion).

Tolerance between holes ± 0.2 mm.

*The dimensions given for the length of the saddle h_1 may be increased using values chosen from R10 series of preferred numbers.

l and h_2 manufacturer's discretion.

$\pm$ Dimensions (210 mm) and $(110 \pm 0.2 \text{ mm})$ are non-preferred dimensions and correspond to dimension (560 mm).

$\S$ The dimensions given for stroke S may be increased using values chosen from the R5 series of preferred numbers. If required, other values may be chosen from the R10 series of preferred numbers.

Tolerance between any two holes ± 0.2 mm.

4.4.1 Location — Column to be located to centre base by means of dowels and tenons or tenons. If dowels are used, the dowel holes shall be midway between upper pair of fixing bolts irrespective of which bolt pattern is employed and dowels must be perpendicular to joint face.

5. Designation

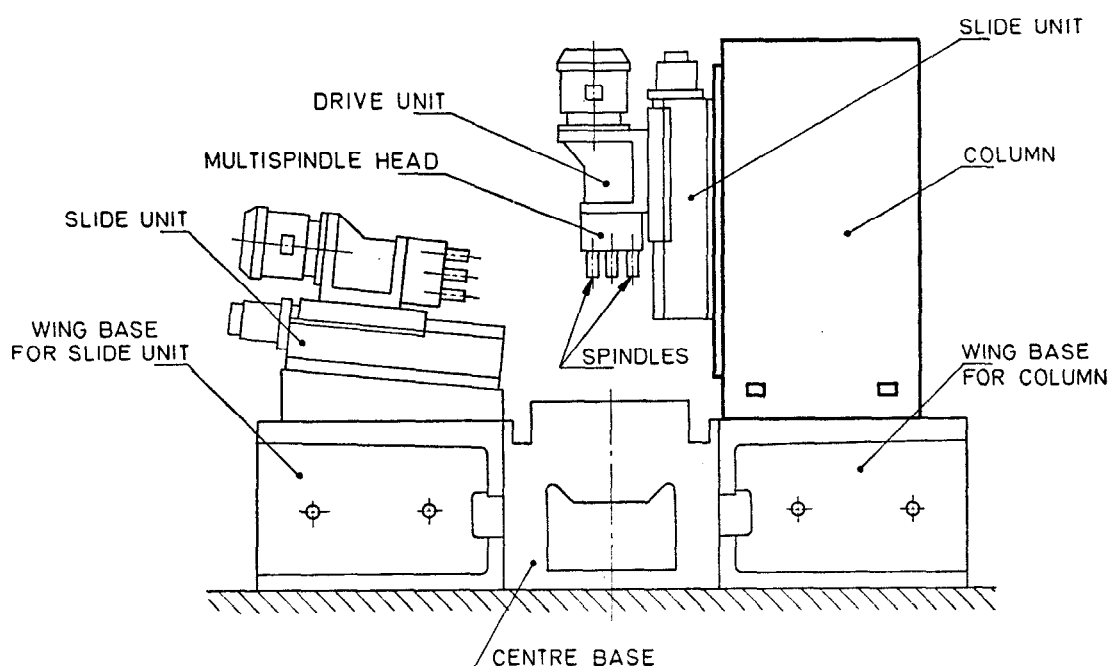
5.1 A column, Type A of nominal size 250 mm shall be designated as:
Column A 250 IS : 11107

5.2 A column, Type B of nominal size 500 mm shall be designated as:
Column B 500 IS : 11107

5.3 A column, Type C of nominal size 500 mm and stroke 400 mm shall be designated as:
Column C 500 × 400 IS : 11107

5.4 A column, Type D of nominal size 500 mm and stroke 400 mm shall be designated as:
Column D 500 × 400 IS : 11107

6. Typical Application of Modular Units



EXPLANATORY NOTE

In preparation of this standard, assistance has been derived from the following standards:

ISO 2891-1977 Modular units for machine tool construction — centre bases and columns

ISO 3589-1975 Modular units for machine tools construction — Integral way columns

ISO 3970-1977 Modular units for machine tools construction — Integral way columns — Floor mounted type

DIN 69525-1981 Machine tools; modular units; vertical column units; constructional sizes

DIN 69526-1981 Machine tools; modular units; integral way column; constructional sizes

ANSI B.5. 43-1977 Modular machine tool standard.